



THE
ONTARIO WATER RESOURCES
COMMISSION

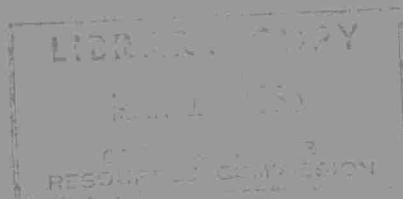
WATER POLLUTION SURVEY

OF THE

VILLAGE OF WHEATLEY

COUNTY OF KENT

1964



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R E P O R T

on

WATER POLLUTION SURVEY

of the

VILLAGE OF WHEATLEY

County of Kent

August 13, 1964.

Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

A sanitary survey of surface-water drains and watercourses within the Village of Wheatley was made on August 13, 1964.

Mr. J. C. Lougheed, Clerk-Treasurer, supplied information pertinent to the survey, and Mr. J. Cobbie, Works Foreman, assisted in the sampling programme.

GENERAL

The population of Wheatley is listed as 1,403 in the 1964 Municipal Directory.

General drainage in the eastern section of the village is to the east branch of the Two Creek watercourse, while drainage from the western section is into the west branch. A municipal trunk storm sewer known as the Big Drain, provides drainage for the north-south central sections and for the business area. This drain is located one block east of and parallel to Erie Street, and outfalls to the east branch of Two Creek. Lateral sewers have been connected to the Big Drain as required, over the years, but apparently no record of such installations has been maintained.

Private septic tank systems are employed generally for the treatment of domestic wastes throughout the village.

The installation and operation of such units are now under the supervision of the Kent County Health Unit. It was learned

that due to heavy clay soil conditions in parts of the village, field tile disposal beds do not function satisfactorily with the result that inadequately treated sewage is being discharged into surface-water drains. It is also known that in other areas, particularly in the business sections, adequate space is not available for the installation of field tile disposal beds. Consequently, direct connections from private disposal units to surface-water drains have been permitted. This illegal practice has resulted in the gross pollution of drains within the municipality. These drains in turn discharge into the Two Creek watercourse, which flows into Lake Erie.

WATER-QUALITY ANALYSES

Surface-Water Drains and Two Creek Watercourse

Water samples were collected, where possible, from the flow at the outfall of each of the drains, and from representative points on the Two Creek watercourse.

The sanitary chemical and bacteriological analyses of samples collected from the surface-water drains and from the branches of Two Creek are listed in Tables 1 and 2 respectively. The locations of sampling points are designated on the accompanying map by watercourse mileage distances from the mouth of Two Creek.

INTERPRETATION OF ANALYSES

For convenience in the interpretation of laboratory analyses, the Ontario Water Resources Commission water-quality objectives for surface-water drains and watercourses are listed:

Surface-Water Drains

5-day BOD (Biochemical Oxygen Demand)

- not greater than 15 parts per million (ppm)

Suspended Solids

- not greater than 15 parts per million (ppm)

Coliform Count (Membrane Filter)

- not greater than 2,400 per 100 millilitres

Watercourses

5-day BOD (Biochemical Oxygen Demand)

- not greater than 4 parts per million (ppm)

Coliform Count (Membrane Filter)

- not greater than 2,400 per 100 millilitres

Anionic Detergents

The presence of anionic detergents in water samples indicates pollution from domestic sources.

SIGNIFICANCE OF LABORATORY ANALYSES

It is noted that the sanitary chemical and bacteriological analyses of all samples collected from the surface-water drains show results greatly in excess of the water-quality objectives. It is therefore indicated that a condition of gross pollution

exists in the drains throughout the village. The excessively high coliform counts and the concentration of anionic detergents indicate that domestic sewage is probably a major source of pollution.

The laboratory analyses of water samples collected from the east and west branches of Two Creek also indicate a condition of pollution in the watercourse.

CONCLUSIONS

The surface-water drains throughout the Village of Wheatley are grossly polluted. This condition may be attributed to the illegal practice of permitting the discharge of inadequately treated wastes and domestic sewage into the surface-water drains. The discharge from these drains in turn may be considered as a major source of pollution to the Two Creek watercourse and to Lake Erie.

SUMMARY

A water pollution survey was conducted in the Village of Wheatley on August 13, 1964.

All surface-water drains investigated were grossly polluted. The extremely high BOD, anionic detergent, and coliform counts indicated inadequately treated sewage and other domestic wastes to be the major cause of such pollution. A condition of gross pollution in the Two Creek watercourse was also indicated by the survey. This condition of pollution may be attributed to the

discharge of pollution from the Wheatley surface-water drains.

RECOMMENDATIONS

1. The Village of Wheatley should institute a sewerage works programme and proceed with the installation of sanitary sewers and the construction of an adequate system for sewage treatment.

2. In the event that the institution of such a project is not feasible, it will then be necessary that the municipality take measures to ensure that all private drains, which discharge inadequately treated wastes to any surface-water drain, or watercourse, are immediately located and severed.

This action will therefore require each property owner to provide a means of adequate treatment for his own wastes.

All of which is respectfully submitted,

District Engineer: C. E. McIntyre
C. E. McIntyre

Approved by: K. H. Sharpe
K. H. Sharpe, Director.

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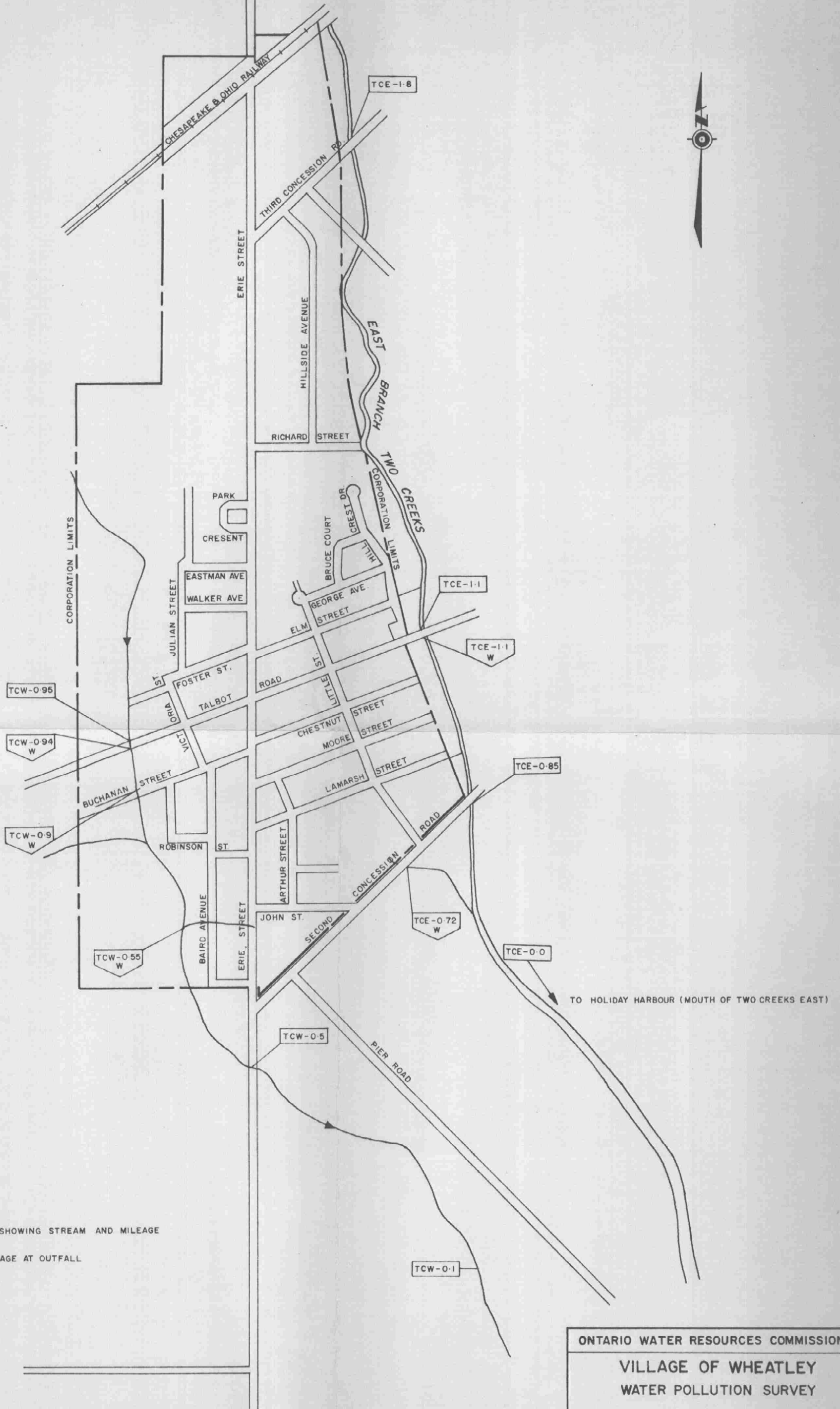
TABLE 1Village of Wheatley-Water Pollution Survey-Surface-Water Drains

<u>Mileage Designation</u>	<u>Location of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>Solids (ppm)</u> <u>Total Susp. Diss.</u>			<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliform Count per 100 ml Membrane Filter</u>
TCW 0.55W	Baird St. drain-outfall to Two Creek, west branch.	185.0	1632	648	984	21.0	110,000,000
TCW 0.9W	Buchanan St. drain outfall to Two Creek, west branch.	52.0	516	46	470	13.0	18,200,000
TCW 0.94W	Talbot St.W. drain outfall to Two Creek, west branch.	235.0	2530	1956	574	16.0	11,400,000
TCE 1.1W	Talbot St.E. drain outfall to Two Creek, east branch.	185.0	868	266	602	22.0	159,000,000
TCE 0.72W	Big Drain (Trunk Sewer) outfall to Two Creek, east branch.	30.0	364	26	338	5.4	17,000,000

T A B L E 2

Village of Wheatley-Water Pollution Survey-Two Creek Watercourse

<u>Mileage</u> <u>Designation</u>	<u>Location of</u> <u>Sampling Point</u>	<u>5-Day</u> <u>BOD</u> <u>(ppm)</u>	<u>Solids (ppm)</u> <u>Total Susp. Diss.</u>			<u>Anionic</u> <u>Detergents</u> <u>as ABS</u> <u>(ppm)</u>	<u>Coliform Count</u> <u>per 100 ml</u> <u>Membrane Filter</u>
TCW 0.1	Two Creek - west branch, near mouth	2.2	244	49	195	0.0	500
TCW 0.5	Two Creek - west branch, at Erie St.S.	18.0	418	46	372	4.0	133,000
TCW 0.95	Two Creek - west branch at Talbot St.W.	16.0	624	64	560	3.2	157,000
TCE 0.0	Two Creek - east branch at mouth (Holiday Harbour)	34.0	602	168	434	0.0	2,000
TCE 0.85	Two Creek - east branch at Conc. 2 Twp. of Romney	11.0	392	60	332	1.3	103,000
TCE 1.1	Two Creek - east branch at Talbot St.E.	13.0	432	58	374	1.3	57,000
TCE 1.8	Two Creek - east branch at Conc. 3 Twp. of Romney	NO FLOW AT TIME OF INSPECTION					



LEGEND

- TCW-0.5 - SAMPLING POINT SHOWING STREAM AND MILEAGE
- TCE-1.1 W - STREAM AND MILEAGE AT OUTFALL
- TYPE OF OUTFALL
W - STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF WHEATLEY

WATER POLLUTION SURVEY

SCALE : 800 400 0 800 FT.

DRAWN BY: L.L.B. DATE: DEC. 1964

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